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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,585	04/07/2005	Seiji Nishiwaki	10873.1671USWO	7641
23552	7590	05/30/2006	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			LAMB, CHRISTOPHER RAY	
			ART UNIT	PAPER NUMBER
			2627	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/530,585

Applicant(s)

NISHIWAKI ET AL.

Examiner

Christopher R. Lamb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☒ Claim(s) 2 and 4-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/7/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because in Fig. 17, the 77 on the right hand side should be a 77'. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. Figures 26-31 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Coombs (US 6,256,285).

Regarding claim 1, Coombs discloses an optical disk device (Fig. 1a) comprising:
a light source (Fig. 1a: 5);

an objective lens for focusing light emitted from the light source on an optical disk (Fig. 1a: 7);

an optical splitter for diffracting the light reflected by the optical disk (Fig. 1a: 13);
and

a photodetector on which the light diffracted by the optical splitter is focused (Fig. 1a: 16),

wherein the optical splitter is divided into n ($n \geq 2$) regions A_k ($k=1, 2, \dots, n$) by a straight line that intersects with an optical axis (apparent in Fig. 2),

the photodetector is divided into at least two regions A and A' (apparent in Fig. 3),

the light emitted from the light source is focused on any one of a plurality of signal planes of the optical disk by the objective lens (the objective lens is Fig. 1a: 7; that it focuses on one of several signal planes is described in, for example, column 4, lines 44-52),

light reflected from the signal plane on which the light emitted from the light source is focused (the focused plane) and light reflected from a signal plane located in proximity to the focused plane (a proximity plane) pass through the objective lens to turn into light beams a and a', respectively, that enter the optical splitter (this is inherent: Coombs refers to the light from other signal planes throughout the disclosure as stray light),

1st-order diffracted light beams a_k and a'_k having a common diffraction optical axis are derived from the light beams a and a' that have entered the regions A_k of the optical splitter, respectively, and are projected on the photodetector (that they are 1st-order diffracted beams is described in column 3, lines 23-31; Coombs only describes the light beams a here but elsewhere acknowledges that stray light, beam a', is also projected on the photodetector: column 3, lines 44-52),

distributions of the 1st-order diffracted light beams a_k and a'_k on the photodetector are approximately inverted with respect to an intersection point of the

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diffraction optical axis and a detection plane (apparent in Fig. 3b. The shaded areas are beams ak' and the outlined areas are beams ak : column 4, lines 44-52), and

the 1st-order diffracted light beam ak is approximately within the region A and the 1st-order diffracted light beam ak' is approximately within the region A' (each detector depicted in Fig. 3b is a split detector: the region A is the area with the outlined part, the region A' is the region the shaded part falls upon).

Regarding claim 3:

This claim is identical to claim 1 except it refers to the -1^{st} -order diffracted light instead of the $+1^{\text{st}}$ -order diffracted light. Coombs makes no distinction between the $\pm 1^{\text{st}}$ order diffracted lights and thus applies equally well to this claim.

Allowable Subject Matter

6. Claims 2 and 4-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2:

The closest prior art of record, Coombs, does not distinguish between the $\pm 1^{\text{st}}$ order diffracted light and thus does not simultaneously have $+1^{\text{st}}$ order diffracted light with distributions inverted with respect to an intersection point of the diffraction optical axis and a detection plane, and -1^{st} order diffracted light with distributions similar to each other with respect to the same intersection point.

These features in combination with the other features of the claim render it allowable over the prior art of record.

Regarding claim 4:

It is similar to claim 2 except the +1st order diffracted light and -1st order diffracted light are reversed, and is thus allowable for the same reasons.

Regarding claims 5-8:

They are allowable due to their dependence on claim 2.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamamoto et al. (US 6,927,375), Ogasawara et al. (US 6,967,908), Ogasawara et al. (US 7,016,269).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (572) 272-5264. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRL 5/25/06


THANG V. TRAN
PRIMARY EXAMINER